



## Subject card

Subject name and code	Chemistry II, PG_00043533						
Field of study	Environmental Engineering						
Date of commencement of studies	October 2021			Academic year of realisation of subject		2022/2023	
Education level	first-cycle studies			Subject group		Obligatory subject group in the field of study Subject group related to scientific research in the field of study	
Mode of study	Full-time studies			Mode of delivery		at the university	
Year of study	2			Language of instruction		Polish	
Semester of study	3			ECTS credits		3.0	
Learning profile	general academic profile			Assessment form		exam	
Conducting unit	Department of Environmental Engineering Technology -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor			prof. dr hab. inż. Hanna Obarska-Pempkowiak			
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		5.0		40.0	75
Subject objectives	Providing to students with basic knowledge about the systematics and structure of organic compounds as well as the distribution and meaning of organic, natural and anthropogenic compounds in the natural environment, especially in water.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U09] is able to use well-chosen methods and measuring devices that enable determination of basic parameters of the water treatment process and wastewater treatment; can perform simple laboratory tests leading to the assessment of water quality, pollutant load in sewage		Student is able to do simple laboratory tests leading to the assessment of water quality and pollution load in sewage		[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_W03] has a structured and theoretically founded knowledge in the field of chemistry and biology, including knowledge necessary to understand the technological processes related to water treatment, wastewater treatment, waste management and sludge management		The student has ordered and theoretically founded knowledge of chemistry necessary to understand technological processes related to water and sewage management.		[SW1] Assessment of factual knowledge		
Subject contents	Chemistry - organic compounds, their specificity, reasons for the diversity of carbon compounds. Bonds in carbon compounds, hybridization of orbitals of carbon atoms. Types of reactions in organic chemistry. Aliphatic hydrocarbons: alkanes, alkenes, alkynes, alkadienes (polymerization). Aromatic hydrocarbons - benzene and its derivatives. Polycyclic aromatic hydrocarbons. Alcohols, organic acids, fats, amino acids, peptides and proteins. Admixtures and organic pollutants of water. Structure and physico-chemical properties of humic acids. Functions and significance of humic acids in the environment. Surface-active substances. Petroleum products. Pesticides. Dioxins. PCBs.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Passing the laboratory		50.0%		40.0%		
	Lecture exam		60.0%		60.0%		

Recommended reading	Basic literature	-
	Supplementary literature	-
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	